



U.S. Department
of Transportation
**Research and
Special Programs
Administration**

OCT 2 2000

400 Seventh St., S.W.
Washington, D.C. 20590

DOT-E 8059
(FOURTEENTH REVISION)

EXPIRATION DATE: November 30, 2001

(FOR RENEWAL, SEE 49 CFR § 107.109)

1. GRANTEE: Structural Composites Industries
Pomona, California

2. PURPOSE AND LIMITATIONS:

This exemption authorizes the manufacture, mark, sale and use of non-DOT specification fiber reinforced plastic (FRP) full composite cylinders for use in the transportation in commerce of certain Division 2.1 and Division 2.2 materials. This exemption provides no relief from any Hazardous Materials Regulation (HMR) other than as specifically stated herein.

3. REGULATORY SYSTEM AFFECTED: 49 CFR Parts 106, 107 and 171-180.
4. REGULATIONS FROM WHICH EXEMPTED: 49 CFR §§ 173.302(a)(1), 173.304(a), (d), and 175.3 in that a non-DOT specification cylinder is not authorized, except as prescribed herein.
5. BASIS: This exemption is based on the application of Structural Composites Industries dated December 2, 1999, submitted in accordance with § 107.109.

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6. HAZARDOUS MATERIALS (49 CFR § 172.101):

Hazardous materials description -- proper shipping name	Hazard Class/ Division	Identi- fication Number	Packing Group
Air, compressed (containing up to 60% by volume oxygen)	2.2	UN1002	N/A
Argon, compressed	2.2	UN1006	N/A
Carbon dioxide	2.2	UN1013	N/A
Helium, compressed	2.2	UN1046	N/A
Hydrogen, compressed	2.1	UN1049	N/A
Methane, compressed or Natural gas, compressed	2.1	UN1971	N/A
Nitrogen, compressed	2.2	UN1066	N/A
Oxygen, compressed	2.2	UN1072	N/A

7. SAFETY CONTROL MEASURES: Packaging prescribed is a non-DOT specification fiber reinforced plastic (FRP) full composite (FC) cylinder made in accordance with Acurex Corporation's technical data submitted with their application and EFT's application dated September 9, 1987 on file with the Office of Hazardous Materials Exemptions and Approvals (OHMEA), and conforming with DOT FRP-1 Standard Revision 2 dated February 15, 1997 (§ 178.AA), except as follows:

§ 178.AA-6 Manufacture.

(a) * * *

(b) This paragraph applies, except that certain designs specifically identified to, and on file with the OHMEA may be autofrettaged by pressurizing to not less than 103 percent of the prescribed minimum test pressure.

* * * * *

§ 178.AA-13 Acceptable results of tests.

(a) Applies except that for cylinders with 2.5 pounds (70 cubic inches) or less water capacity, the permanent expansion may not exceed 10 percent of total elastic expansion at test pressure.

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§ 178.AA-18 Design qualification tests.

* * * *

(b) Applies, except that designs using 6351 liner previously qualified under this exemption may be qualified based on acceptable results of tests on the largest capacity (with the same diameter and service pressure rating) cylinder to represent tests for smaller sized cylinders (with the same diameter and service pressure rating) cylinder. In this case, mechanical strength of 6061 alloy must be the same (within plus or minus 2-1/2 percent of mechanical properties of 6351 alloy used).

(c) Applies, except that designs using 6351 liner previously qualified under this exemption may be qualified based on acceptable results of tests on the largest capacity (with the same diameter and service pressure rating) cylinder to represent tests for smaller sized cylinders (with the same diameter and service pressure rating). In this case, mechanical strength of 6061 alloy must be the same (within plus or minus 2-1/2 percent of mechanical properties of 6351 alloy used).

(d) * * *

(e) Not required for designs using 6061 T6 alloy with mechanical properties within plus or minus 2-1/2 percent of strength of 6351 alloy previously used.

8. SPECIAL PROVISIONS:

a. Offerors for transportation of the hazardous materials specified in this exemption may use the packaging described in this exemption for the transportation of such hazardous materials provided no modifications or changes are made to the packages, all terms of this exemption are complied with, and a copy of the current exemption is maintained at each facility from which such offering occurs.

b. Each packaging manufactured under the authority of this exemption must be either (1) marked with the name of the manufacturer and location (city and state) of the facility at which it is manufactured or (2) marked with a registration symbol designated by the Office of Hazardous Materials Exemptions and Approvals Program for a specific manufacturing facility.

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c. A copy of this exemption, in its current status, must be maintained at each manufacturing facility at which this packaging is manufactured and must be made available to a DOT representative upon request.

d. Shippers using the packaging covered by this exemption must comply with all provisions of this exemption, and all other applicable requirements contained in 49 CFR Parts 171-180.

e. Cylinders may not be used for underwater breathing purposes.

f. Cylinder service life may not exceed 15 years.

g. Cylinder must be packaged in accordance with § 173.301(k).

h. Each cylinder must be reinspected and hydrostatically retested at least once every three years in accordance with Compressed Gas Association Pamphlet C-6.2 (1988 edition) except that permanent volumetric expansion may not exceed 10 percent of total volumetric expansion at test pressure for cylinders with 2.5 pounds or less (70 cubic inches) water capacity. Retest dates may be applied on the epoxy coating in a permanent manner other than by stamping, as an alternate, retest dates may be stamped on the outer exposed metallic surface of the cylinder neck. Reheat treatment or repair of rejected cylinders not authorized, except that only cylinders made under P/N 6410-001 having 3000 psig service pressure and a nominal volume of 50 cubic inches may be repaired under the following conditions:

(1) Repairs must be performed by EFI Corporation or a cylinder requalification facility approved by the Associate Administrator for Hazardous Materials Safety (AAHMS).

(2) Repair must be limited to a maximum of 2 damage sites per cylinder on a one time only basis.

(3) Each repaired cylinder must be stamped with a small R in the neck adjacent to the serial number.

(4) Maximum allowable defect is 1 inch long (no width restriction) by 0.016 inch deep in the sidewall or 0.008 inch deep in the heads. Any cylinder with damage exceeding these limits must be removed from service.

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(5) A report identifying the repair facility and a listing of the repaired cylinders by serial numbers must be submitted to the OHMEA at least once every six months from the date of this exemption.

i. A cylinder which has been subjected to action of fire must not be returned to service.

j. Transportation of flammable gas is not authorized aboard passenger-carrying aircraft or cargo vessel.

k. Cylinders charged with oxygen or with air enriched with greater than 39 percent by volume oxygen content, must conform with § 173.302(a)(5)(i) through (a)(5)(iv).

l. Acurex, former holder of this exemption, is responsible for compliance with the terms of DOT-E 8059 (Fourth Revision) and with the provisions of 49 CFR as related to those cylinders manufactured prior to May 6, 1985 and marked with this exemption number.

m. Acurex, former holder of this exemption, is not authorized to manufacture cylinders under this exemption after May 5, 1985.

9. MODES OF TRANSPORTATION AUTHORIZED: Motor vehicle, rail freight, cargo vessel, passenger-carrying aircraft, and cargo-aircraft only.

10. MODAL REQUIREMENTS: A current copy of this exemption must be carried aboard each or motor vehicle, cargo vessel, and aircraft used to transport packages covered by this exemption. The shipper must furnish a copy of this exemption to the air carrier before or at the time the shipment is tendered.

11. COMPLIANCE: Failure by a person to comply with any of the following may result in suspension or revocation of this exemption and penalties prescribed by the Federal hazardous materials transportation law, 49 U.S.C. 5101 et seq:

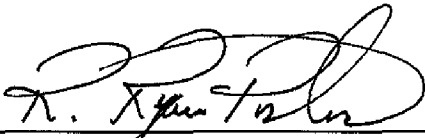
- o All terms and conditions prescribed in this exemption and the Hazardous Materials Regulations, Parts 171-180.
- o Registration required by § 107.601 et seq., when applicable.

Each "Hazmat employee", as defined in § 171.8 who performs a function subject to this exemption must receive training on the requirements and conditions of this exemption in addition to the training required by §§ 172.700 through 172.704.

No person may use or apply this exemption, including display of its number, when the exemption has expired or is otherwise no longer in effect.

12. REPORTING REQUIREMENTS: The carrier is required to report any incident involving loss of packaging contents or packaging failure to the Associate Administrator for Hazardous Materials Safety (AAHMS) as soon as practicable. (Sections 171.15 and 171.16 apply to any activity undertaken under the authority of this exemption.)

Issued in Washington, D.C.



for Robert A. McGuire
Associate Administrator for
Hazardous Materials Safety

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(DATE)

Address all inquiries to: Associate Administrator for Hazardous Materials Safety, Research and Special Programs Administration, Department of Transportation, Washington, D.C. 20590.
Attention: DHM-31.

The original of this exemption is on file at the above office. Photo reproductions and legible reductions of this exemption are permitted. Any alteration of this exemption is prohibited.

Copies of exemptions may be obtained from the AAHMS, U.S. Department of Transportation, 400 7th Street, SW, Washington, DC 20590-0001, Attention: Records Center, 202-366-5046.

PO: AB(00)